

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 24 No. 13

# ***Clinical and Translational Neurophotonics 2023***

**Victor X. D. Yang**  
**Jana M. Kainerstorfer**  
*Editors*

**28 January 2023**  
**San Francisco, California, United States**

*Sponsored and Published by*  
SPIE

**Volume 12364**

Proceedings of SPIE, 1605-7422, V. 12364

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Clinical and Translational Neurophotonics 2023, edited by Victor X. D. Yang,  
Jana M. Kainerstorfer, Proc. of SPIE Vol. 12364, 1236401  
© 2023 SPIE · 1605-7422 · doi: 10.1117/12.2678441

Proc. of SPIE Vol. 12364 1236401-1

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at [SPIDigitalLibrary.org](http://SPIDigitalLibrary.org).

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:  
Author(s), "Title of Paper," in *Clinical and Translational Neurophotonics 2023*, edited by Victor X. D. Yang, Jana M. Kainerstorfer, Proc. of SPIE 12364, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422  
ISSN: 2410-9045 (electronic)

ISBN: 9781510658332  
ISBN: 9781510658349 (electronic)

Published by  
**SPIE**  
P.O. Box 10, Bellingham, Washington 98227-0010 USA  
Telephone +1 360 676 3290 (Pacific Time)  
[SPIE.org](http://SPIE.org)  
Copyright © 2023 Society of Photo-Optical Instrumentation Engineers (SPIE).

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center at [copyright.com](http://copyright.com). Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

Publication of record for individual papers is online in the SPIE Digital Library.

**SPIE. DIGITAL LIBRARY**  
[SPIDigitalLibrary.org](http://SPIDigitalLibrary.org)

---

**Paper Numbering:** A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

- The first five digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

# Contents

v *Conference Committee*

---

## CLINICAL AND TRANSLATIONAL NEUROPHOTONICS I

---

- 12364 0H **Effects of blood pressure on brain metabolism during cardiopulmonary bypass** [12364-11]
- 12364 0I **Optical sensor for non-invasive intracranial pressure monitoring in traumatic brain injury**  
[12364-12]
- 12364 0J **Non-invasive estimation of intracranial pressure using near-infrared spectroscopy** [12364-13]

---

## CLINICAL AND TRANSLATIONAL NEUROPHOTONICS II

---

- 12364 0N **Monitoring cerebral autoregulation at the respiration rate using near-infrared spectroscopy**  
[12364-17]



# Conference Committee

## *Symposium Chairs*

**Sergio Fantini**, Tufts University (United States)  
**Paola Taroni**, Politecnico di Milano (Italy)

## *Symposium Co-chairs*

**Jennifer K. Barton**, The University of Arizona (United States)  
**Wolfgang Drexler**, Medizinische Universität Wien (Austria)

## *Program Track Chairs*

**Shy Shoham**, New York University (United States)  
**Anna Devor**, Boston University (United States)

## *Conference Chairs*

**Victor X. D. Yang**, University of Toronto (Canada) and Ryerson  
University (Canada)  
**Jana M. Kainerstorfer**, Carnegie Mellon University (United States)

## *Conference Program Committee*

**Steen J. Madsen**, University of Nevada, Las Vegas (United States)  
**Nifish V. Thakor**, National University of Singapore (Singapore)  
**David Abookasis**, Ariel University of Samaria (Israel)  
**Frederic Leblond**, Polytechnique Montréal (Canada)  
**Herbert Stepp**, Ludwig-Maximilians-Universität München (Germany)  
**Cuiru Sun**, Tianjin University (China)

